Government of Pakistan

National Vocational and Technical Training Commission

Blended International IT Trainings – BIITT 2025

Course Contents/ Lesson Plan

Course Title: IBM Full-Stack JavaScript Developer Professional Certificate

Duration: 3 Months

NAVTTC HQs, Plot no. 38, Kirthar Road, H-9
Islamabad

Trainer Name	
Course Title	**IBM Full-Stack JavaScript Developer Professional Certificate**
Objective of Course	A full-stack JavaScript developer is responsible for both the front-end (client-side) and back-end (server side) development of web applications. In this program, you'll learn to build, deploy, test, run, and manage cloud-native full-stack applications. Technologies covered include **HTML, CSS, GitHub, JavaScript, Node.js, Express, React, DevOps, Containers, Docker, Kubernetes, NoSQL databases, Microservices, Serverless computing**, and more. You'll also **develop several applications using front-end and back-end technologies** and deploy them using cloud-native methodologies. In the final course, you learn inside tips and steps to perform effectively at interviews and **unlock exclusive access to career support resources** to help you in your job search. Upon completing the full program, you will have a portfolio of projects that will not only boost your confidence but also prepare you to excel in interviews. Additionally, you will be awarded a Professional Certificate and a badge from IBM, serving as tangible proof of your skills and proficiency to potential employers.
Course Execution Plan	Total Duration of Course: **3 Months (12 Weeks)**
	Class Hours: **3 Hours per day**
	Theory: 30% Practical: 70%
	Weekly Hours: **15 Hours Per week**
	Total Contact Hours: **200 Hours**

Learning Outcome of the Course	By the end of the course, students will have acquired a comprehensive skill set in: • Master the full-stack development languages, frameworks, tools, and technologies to develop job-ready skills valued by employers. • Develop websites and front-end software using HTML, CSS, JavaScript, and React. • Write, deploy, and scale cloud-native back-end applications using Node, NoSQL databases, containers, microservices, and serverless. • Employ DevOps practices and Agile methodologies to continuously build and deploy software using CI/CD tools.
Companies Offering Jobs in the respective trade	• IBM • Accenture • Cognizant • Infosys • Capgemini • Amazon • Flipkart • Turing • Andela • Deel • Freelancing These companies, Hands-on, project-based learning, end-to-end understanding of frontend, backend & deployment and proven skills in modern JavaScript tools & frameworks.
Job Opportunities	Over the past decade, JavaScript has evolved into the backbone of modern web development, powering everything from single-page applications to enterprise-level platforms. With the rapid shift toward cloud-based and responsive digital solutions, full-stack JavaScript developers are in high demand across industries. Graduates of this certification can pursue roles such as: • Full-Stack JavaScript Developer • Frontend Developer (React.js) • Backend Developer (Node.js, Express) • Web Developer • Junior Software Engineer • MERN Stack Developer • API Developer • DevOps Support Engineer • Technical Support Engineer (Web Stack) • Freelance Web Developer • Cloud Web Application Developer • Deployment Engineer (CI/CD)
No of Students	25-30

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Learning Place	Labs				
Instructional Resources	The following link will be accessible for students once they are enrolled in the program: https://www.coursera.org/professional-certificates/ibm-full-stack-javascript-developer				
Scheme of Study	**Sr. No**	**Main Topics**	**Theory Hrs.**	**Practical Hrs.**	**Total Hrs.**
	1.	Introduction to Mobile App Development / Introduction to Software Engineering	**10**	**5**	**15**
	2.	Get Started with Android App Development / Designing User Interfaces and Experiences (UI/UX)	**5**	**10**	**15**
	3.	Continued - Designing User Interfaces and Experiences (UI/UX) / Getting Started with Git and GitHub	**4**	**11**	**15**
	4.	Getting Started with Git and GitHub / Introduction to HTML, CSS, & JavaScript	**5**	**10**	**15**
	5.	Continued - Introduction to HTML, CSS, & JavaScript / Get Started with iOS App Development	**5**	**10**	**15**
	6.	Continued - Get Started with iOS App Development / Flutter and Dart: Developing iOS, Android, and Mobile Apps	**3**	**12**	**15**
	7.	Continued - Flutter and Dart: Developing iOS, Android, and Mobile Apps / Developing Front-End Apps with React	**3**	**12**	**15**
	8.	Continued - Developing Front-End Apps with React / React Native: Developing Android and iOS Apps	**3**	**12**	**15**
	9.	Continued - React Native: Developing Android and iOS Apps / Mobile App Notifications, Databases, & Publishing	**3**	**12**	**15**
	10.	Continued - Mobile App Notifications, Databases, & Publishing	**3**	**12**	**15**
	11.	Mobile App Development Capstone Project	**0**	**15**	**15**
	12.	Generative AI: Elevate your Software Development Career	**10**	**5**	**15**
	Total		**54**	**126**	**180**

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Scheduled Week	Module Title	Day	Learning Units	Tasks
Week 1/12	Introduction to Mobile App Development / Introduction to Software Engineering	Day 1	Introduction to Mobile App Landscape	Create a Conceptual Mobile App Business Plan with Wireframes
		Day 2	Mobile App Development Ecosystem	
		Day 3	The software development lifecycle and Introduction to Software Development	
		Day 4	Basics of Programming & Software Architecture, Designs & Patterns	
		Day 5	Job Opportunities and Skillsets in Software Engineering & Final Quiz and Project	
Week 2/12	Get Started with Android App Development / Designing User Interfaces and Experiences (UI/UX)	Day 1	Introduction to Android Development & Developing Android Apps	Project: Create a Daily Fitness Tracker App
		Day 2	Project and Course Wrap Up	
		Day 3	Designing Intuitive Front Ends and Mockup Design Principles	
		Day 4	Web Design Methodologies	
		Day 5	UI Design with Figma	
Week 3/12	Continued - Designing User Interfaces and Experiences (UI/UX) / Getting Started with Git and GitHub	Day 1	Continued - UI Design with Figma	Building a Sales App with Figma's Interactive Design Tools & GitHub UI
		Day 2	Project Initiation	
		Day 3	Completion of Project & Assessment	
		Day 4	Git and GitHub Fundamentals	
		Day 5	Git Commands	
Week 4/12	Getting Started with Git and GitHub / Introduction to HTML, CSS, & JavaScript	Day 1	Managing GitHub Projects	Simple Interest Calculator
		Day 2	Working with GitHUB from your Windows Desktop & Project	
		Day 3	Project Review and Assessment	
		Day 4	HTML Overview	
		Day 5	CSS Overview	
Week 5/12	Continued - Introduction to HTML, CSS, & JavaScript / Get Started	Day 1	HTML5 Elements	Single Page Portfolio Website
		Day 2	List comprehension	
		Day 3	JavaScript Programming for Web Applications	

	with iOS App Developmen	Day 4	Final Project	
		Day 5	Introduction to IOS Development	
Week 6/12	Continued - Get Started with iOS App Developmen t / Flutter and Dart: Developing iOS, Android, and Mobile Apps	Day 1	Introduction to Swift Programming	Create a Simple Recipe App in SwiftUI
		Day 2	Final Project and Course Wrap Up	
		Day 3	Introduction to Flutter and Dart	
		Day 4	Exploring Dart Language	
		Day 5	Working with Flutter	
Week 7/12	Continued - Flutter and Dart: Developing iOS, Android, and Mobile Apps / Developing Front-End Apps with React	Day 1	Advanced Flutter	Working with React DevTools, Handling Errors and Debugging, Building an Application for Android using APK Files
		Day 2	Final Project	
		Day 3	Continued Final Project	
		Day 4	Introduction to React and Class Components	
		Day 5	Understanding Function Components with Array and DOM Manipulation	
Week 8/12	Continued - Developing Front-End Apps with React / React Native: Developing Android and iOS Apps	Day 1	In-depth Understanding of Advanced React Functionality	Create an Event Registration App to Handle Form Data, Validating Form Data with Formik and Yup, Apartment Listings Display with FlatList, Note Taking App with AsyncStorage
		Day 2	Practice, Final Project, and Peer Review Assignment	
		Day 3	Introduction to React Native	
		Day 4	Working with React Native	
		Day 5	Working with Style and State Management	
Week 9/12	Continued - React Native: Developing Android and iOS Apps / Mobile App Notifications , Databases, & Publishing	Day 1	Handling User Interfaces and Lists	Media Manager App Using React Native
		Day 2	Debugging and Publishing Apps in React Native	
		Day 3	Final Project and Assessment	
		Day 4	Mobile Notifications and UI Design	
		Day 5	Back-end Services & Databases in Mobile Apps	

Week 10/12	Continued - Mobile App Notifications, Databases, & Publishing	Day 1	Continued - Back-end Services & Databases in Mobile Apps	Movie Watcher App Using Flutter
		Day 2	Mobile App Publishing, Marketing, and Support	
		Day 3	Publishing Flutter and React Native Apps	
		Day 4	Final Project	
		Day 5	Completion of Final Project and Course Wrap-Up	
Week 11/12	Mobile App Development Capstone Project	Day 1	User Stories and UI/UX	Create a mobile app based on a project scenario using either Flutter or React Native frameworks. Each module features optional labs in Flutter or React Native to deepen the expertise
		Day 2	Implement Home and Detail Screens	
		Day 3	Data Persistence and APIs & Setting Screens	
		Day 4	Notifications, Publishing, and Marketing	
		Day 5	Final Project Submission and Evaluation	

Week 12/12	Generative AI: Elevate your Software Development Career	Day 1	Generative AI and Software Development	Comprehensive project that challenges you to build a personalized learning platform for developers using generative AI.
		Day 2	Continued - Generative AI and Software Development	
		Day 3	Generative AI for Software Development Workflows and its Considerations	
		Day 4	Final Project	
		Day 5	Final Exam	

List of Machinery / Equipment

1. Software List

Sr. No	Software Name
1.	MS Office(Installed on each PC)
2.	Operating System (Windows, Linux or other Operating Systems)
3.	Programming Languages including PyCharm, Notebook

2. Minimum Qualification of Teachers / Instructor

The qualification of teachers / instructor of this course should be a minimum of bachelor's in computer science / software engineering with minimum 3 years of development experience in relevant trade.

3. Eligibility for the trainees:

As defined by NAVTTC

4. Supportive

Notes Teaching

Learning Material

https://www.coursera.org/professional-certificates/ibm-ios-android-mobile-app-developer-pc?

5. List of Machinery/Equipments

Sr. No	Name of item as per curriculum	Quantity physically available at the training location
1	Computers Minimum Core-i5 8th Generation ● LCD Display 17" with built in speakers	25
2	DSL Internet Connection (Minimum 5 MB)	Available on every PC
3	**Accessories/Devices** ● Connectors ● Multimedia ● Audio/visual aid ● White Board ● Flip Chart Board	25 each
4	**Wires, data cables, power plugs, power supply**	For every PC

5	**UPS**	Available
6	**Generator / Solar Backup**	Available
7	**Air Conditioner (2 Tons)**	Available

Annexure # 01

Tasks for IBM iOS and Android Mobile App Developer Professional Certificate

Task No.	Description	Week
1.	Create a Conceptual Mobile App Business Plan with Wireframes	Week 1
2.	Project: Create a Daily Fitness Tracker App	Week 2
3.	Building a Sales App with Figma's Interactive Design Tools & GitHub UI	Week 3
4.	Simple Interest Calculator	Week 4
5.	Single Page Portfolio Website	Week 5
6.	Create a Simple Recipe App in SwiftUI	Week 6
7.	Working with React DevTools, Handling Errors and Debugging, Building an Application for Android using APK Files	Week 7
8.	Create an Event Registration App to Handle Form Data, Validating Form Data with Formik and Yup, Apartment Listings Display with FlatList, Note Taking App with AsyncStorage	Week 8
9.	Media Manager App Using React Native	Week 9
10.	Movie Watcher App Using Flutter	Week 10
11.	Create a mobile app based on a project scenario using either Flutter or React Native frameworks. Each module features optional labs in Flutter or React Native to deepen the expertise	Week 11
12.	Comprehensive project that challenges you to build a personalized learning platform for developers using generative AI.	Week 12